

Application No. 10/000,236
Amdt. dated December 31, 2003
Reply to Office Action of October 21, 2003
Inventor(s) Name: Alan Smithies
Attorney Docket No.: 15880-10003

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended): A filter medium for use in a filtering application at an application temperature, the filter medium comprising:

a polymer substrate capable of retaining a physical structure at the application temperature; and

a ~~polyimide~~ stiffening agent consisting of a polyimide adapted for ~~treating the polymer substrate.~~ treating the polymer substrate and applied thereto, wherein the polymer substrate with applied stiffening agent is capable of withstanding at least 100,000 cleaning pulses at the application temperature.

2. (Cancelled):

3. (Currently Amended): The filter medium of claim 1 wherein the polymer substrate is selected from the group consisting of polyarylene sulfides, aramides, glass, polyimides, acrylics, pre-oxidized acrylics and mixtures thereof.

4. (Previously Presented): The filter medium of claim 1 wherein the substrate comprises polyphenylene sulfide.

5. (Previously Presented): The filter medium of claim 1 wherein the physical structure is a pleated structure.

6. (Currently Amended): The filter medium of claim 1 wherein the polyimide is selected from the group consisting of ~~polyamides~~, polyamideimides, polyetherimides, and polybismaleimides and mixtures thereof.

7. (Currently Amended): The filter medium of claim 1 wherein the ~~polyimide-based~~ stiffening agent consisting of a polyimide is about 2% to about 20% by weight of the total weight of the filter medium.

8. (Currently Amended): The filter medium of claim 1 wherein the application temperature is greater ~~than about 375°F.~~ than about 375°F.

9. (Currently Amended): A filter medium for use in a filtering application at an application temperature, the filter medium comprising:

a polymer substrate capable of retaining a pleated structure at the application temperature;

a plurality of pleats formed into the ~~polymer substrate; and~~ polymer substrate at a temperature that is higher than the application temperature; and
a stiffening agent consisting of a polyimide adapted for treating the polymer substrate.

10. (Currently Amended): The filter medium of claim 9 wherein the polymer substrate is selected from the group consisting of polyarylene sulfides, aramides, glass, polyimides, acrylics, pre-oxidized acrylics and mixtures thereof.

11. (Previously Presented): The filter medium of claim 9 wherein the polymer substrate comprises polyphenylene sulfide.

12. (Previously Presented): The filter medium of claim 9 wherein the polyimide is selected from the group consisting of polyamideimides, polyetherimides, and polybismaleimides and mixtures thereof.

13. (Currently Amended): The filter medium of claim 9 wherein the ~~polyimide-based~~ stiffening agent consisting of a polyimide is about 2% to about 20% by weight of the total weight of the filter medium.

14. (Currently Amended): The filter medium of claim 9 wherein the application temperature is greater ~~than about 375°F.~~ than about 375°F.

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15. (Currently Amended): A filter medium for use in a filtering application at an application temperature, the filter medium comprising:

a polymer substrate capable of retaining a pleated structure at the application temperature;

a plurality of pleats formed into the ~~polymer substrate; and~~ polymer substrate at a temperature that is higher than the application temperature; and

a stiffening agent consisting of a polyamideimide adapted for treating the polymer substrate.

16. (Previously Presented): The filter medium of claim 15 wherein the polymer substrate is selected from the group consisting of polyarylene sulfides, aramides, polyimides, acrylics, pre-oxidized; acrylics and mixtures thereof.

17. (Previously Presented): The filter medium of claim 15 wherein the polymer substrate comprises polyphenylene sulfide.

18. (Currently Amended): The filter medium of claim 15 wherein the application temperature is ~~greater than about 375°F.~~ greater than about 375°F.

19. (Withdrawn): A method of making a filter medium comprising:

providing a substrate;

calendering the substrate;

providing a polyimide stiffening agent;

treating the calendered substrate with the polyimide stiffening agent; and curing the treated substrate.

20. (Withdrawn): The method of claim 19 wherein the substrate is selected from the group consisting of polyarylene sulfides, aramides, polyimides, acrylics, pre-oxidized acrylics and mixtures thereof; and

the polyimide is selected from the group consisting of polyamideimides, polyetherimides and polybismaleimides.

21. (Withdrawn): The method of claim 19 further including pleating the treated substrate.

22. (Withdrawn): The method of claim 19 wherein the substrate comprises polyphenylene sulfide.

23. (Withdrawn): A method of making a filter medium comprising:

providing a substrate;

calendering the substrate;

providing a polyimide stiffening agent;

treating the calendered substrate with the polyimide stiffening agent;

curing the treated substrate; and

pleating the treated substrate.

24. (Withdrawn): The method of claim 23 wherein the substrate is selected from the group consisting of polyarylene sulfides, aramides, polyimides, acrylics, pre-oxidized acrylics and mixtures thereof; and

the polyimide is selected from the group consisting of polyamideimides, polyetherimides and polybismaleimides.